

# Advancing clinical neuroscience literacy among psychiatric practitioners

**It is time for psychiatric clinicians to move beyond the traditional practice of describing psychopathology in terms of signs and symptoms, which is perpetuated by the DSM diagnostic schemas.**

An abundance of recent neuroscience advances is directly related to psychiatric disorders, because the primary mission of the brain is to generate a mind, and every new discovery provides another piece of the psychiatric disorders puzzle. The time also is ripe to incorporate clinical neuroscience concepts and language in our clinical practice and terminology. The neuroscientification of clinical psychiatry must start with clinical neuroscience literacy.

Although the traditional training of psychiatrists has evolved, it continues to perpetuate the old-fashioned model of care exemplified by the mental status examination, which documents the patient's appearance, speech, mood, affect, thoughts, perceptions, behavior, cognition, insight, and judgement. Evaluations and progress notes have been constrained by this decades-old formula of observing, interviewing, and documenting signs and symptoms, and arriving at a working diagnosis, followed by a treatment plan comprised of a cluster of drug names, psychotherapeutic modalities,

and social or rehabilitation interventions. This widely accepted procedure is important because it focuses on the mind. But where are the details about the brain, whose structural and functional aberrations generate the anomalies of the mind and are the scientific foundations of psychiatric care?

All psychiatrists are fully aware that brain pathology is the source of every psychiatric disorder they evaluate, diagnose, and treat. But it is time to formulate every patient's care using neuroscience data and include neural mechanisms of the psychiatric disorder in the chart. Our clinical language must be integrated with the rapidly growing neuroscience of abnormalities in brain-behavior links.

Psychiatry is lagging behind neurology, its sister brain specialty, where neural pathways and processes are front and center in describing symptoms. According to Eisenberg,<sup>1</sup> psychiatry training in the 1980s was, for the most part, "brainless." But it should not remain so, because neuroscience advances have skyrocketed since he made that provocative statement 3 decades ago. Yet, the psychiatric residency training curriculum in many programs is lagging behind the rapid evolution of psychiatry as a clinical neuroscience.<sup>2</sup>

To its credit, the Accreditation Council for Graduate Medical Education, which oversees and accredits residency train-



**Henry A. Nasrallah, MD**  
Editor-in-Chief

**By formulating signs and symptoms in evidence-based, neurobiological frameworks, the misperceptions of the physical nature of mental illness will dissipate**

**To comment on this editorial or other topics of interest, visit [www.facebook.com/CurrentPsychiatry](http://www.facebook.com/CurrentPsychiatry), or go to [CurrentPsychiatry.com](http://CurrentPsychiatry.com) and click on the "Contact us" link.**

### Editorial Staff

EDITOR **Jeff Bauer**  
SENIOR EDITOR **Patrice Weeks**  
ASSISTANT EDITOR **Jason Orsz**  
WEB ASSISTANTS  
**Tyler Mundhenk, Kathryn Wighton**

### Art & Production Staff

CREATIVE DIRECTOR **Mary Ellen Niatas**  
ART DIRECTOR **Pat Fopma**  
DIRECTOR, JOURNAL MANUFACTURING  
**Michael Wendt**  
PRODUCTION MANAGER **Donna Pituras**

### Publishing Staff

PUBLISHER **Sharon J. Spector**  
DIGITAL ACCOUNT MANAGER  
**Reinaldo Valdivia**  
SENIOR DIRECTOR OF SALES  
**Tim LaPella**  
CONFERENCE MARKETING MANAGER  
**Kathleen Wenzler**

### Editor-in-Chief Emeritus

**James Randolph Hillard, MD**

### Frontline Medical Communications

CHAIRMAN **Stephen Stoneburn**  
PRESIDENT, DIGITAL & CFO  
**Douglas E. Grose**  
PRESIDENT/CEO **Alan J. Imhoff**  
PRESIDENT, CUSTOM SOLUTIONS **JoAnn Wahl**  
SENIOR VICE PRESIDENT, FINANCE  
**Steven Resnick**  
VICE PRESIDENT, OPERATIONS **Jim Chicca**  
VICE PRESIDENT, AUDIENCE DEVELOPMENT  
**Donna Sickles**  
VICE PRESIDENT, CUSTOM PROGRAMS  
**Carol Nathan**  
VICE PRESIDENT, CUSTOM SOLUTIONS  
**Wendy Raupers**  
VICE PRESIDENT, eBUSINESS DEVELOPMENT  
**Lee Schweizer**  
VICE PRESIDENT, HUMAN RESOURCES  
& FACILITY OPERATIONS **Carolyn Caccavelli**  
VICE PRESIDENT, MARKETING & CUSTOMER  
ADVOCACY **Jim McDonough**  
VICE PRESIDENT, SALES **Mike Guire**  
VICE PRESIDENT, SOCIETY PARTNERS  
**Mark Branca**  
CORPORATE DIRECTOR, RESEARCH  
& COMMUNICATIONS **Lori Raskin**  
EDITORIAL DIRECTOR **Karen J. Clemments**

Subscription Services: (800) 480-4851

In affiliation with Global Academy  
for Medical Education, LLC

VICE PRESIDENT, MEDICAL EDUCATION  
& CONFERENCES **Sylvia H. Reitman, MBA**  
VICE PRESIDENT, EVENTS **David J. Small, MBA**

**FRONTLINE**  
MEDICAL COMMUNICATIONS

7 Century Drive, Suite 302  
Parsippany, NJ 07054  
Tel: (973) 206-3434  
Fax: (973) 206-9378  
www.frontlinemedcom.com

Published through an  
educational partnership  
with Saint Louis University



ing programs in all specialties, including psychiatry, recently announced that psychiatric residency training must emphasize neuroscience competence side-by-side with clinical competence. Psychiatric residents must increasingly incorporate neurobiology in their formulation of clinical care and determine how the selected pharmacologic therapy addresses the dysregulated neural circuitry underlying the clinical manifestation. A good example of this method is a recently published case of posttraumatic stress disorder (PTSD),<sup>3</sup> which discussed the clinical components and treatment of this brain disorder through the prism of clinical neuroscience research data. PTSD “trauma” is not only psychological, but also neurobiological, and both must be incorporated in formulating a clinical case.

Another important step has emerged to focus on infusing neuroscience facts and concepts within the clinical training of psychiatric residents. The National Neuroscience Curriculum Initiative ([www.nncionline.org](http://www.nncionline.org)) is a timely and welcome initiative that will aggressively promulgate a clinical neuroscientification of psychiatric training, triggering a roadmap for modern, cutting-edge psychiatric practice.<sup>4</sup> This will help consolidate psychiatry’s rightful place as a clinical neuroscience, without relinquishing its biopsychosocial roots.

As research continues to elucidate the neural mechanisms of key psychiatric symptoms, such as anxiety, depression, mania, impulsiveness, compulsions, delusions, or hallucinations, the transformation of psychiatry into an authentic clinical neuroscience is inevitable. But contemporary psychiatric practitioners must retool and start their journey toward neuroscience literacy by attending relevant continuing medical education presentations and regularly reading journals that focus on clinical psychiatric neuro-

science, such as *Molecular Psychiatry*, *JAMA Psychiatry*, *Biological Psychiatry*, *Neuropsychopharmacology*, and *Progress in Neuro-psychopharmacology and Biological Psychiatry*. CURRENT PSYCHIATRY will do its part by establishing a section on psychiatric neuroscience for our readers. Dr. Stephen Stahl’s recent guest editorial in CURRENT PSYCHIATRY<sup>5</sup> about Neuroscience-based Nomenclature is another important step toward the neuroscientification of psychiatric medications’ names, using the neural mechanism of action nomenclature instead of a single clinical indication (eg, antidepressant or antipsychotic) when there may be several approved uses for the medication.

It is my sincere hope that my fellow clinical psychiatrists will steadily grow their clinical neuroscience literacy and apply it to daily patient care. By formulating psychiatric signs and symptoms in evidence-based, neurobiological frameworks provided by clinical neuroscience advances, the myths, shibboleths, and misperceptions of what causes mental illness will dissipate and eventually vanish. And so will the stigma that shrouds our patients who suffer from brain disorders that manifest as disruptions of 1 or more complex functions of the human mind.

A handwritten signature in black ink that reads "Henry A. Nasrallah".

**Henry A. Nasrallah, MD**

Editor-in-Chief

### References

1. Eisenberg L. Mindlessness and brainlessness in psychiatry. *Br J Psychiatry*. 1986;148:497-508.
2. Reynolds CF 3rd, Lewis DA, Detre T, et al. The future of psychiatry as clinical neuroscience. *Acad Med*. 2009;84(4):446-450.
3. Ross DA, Arbuckle MR, Travis MJ, et al. An integrated neuroscience perspective on formulation and treatment planning for posttraumatic stress disorder: an educational review. *JAMA Psychiatry*. 2017;74(4):407-415.
4. Insel TR, Quirion R. Psychiatry as a clinical neuroscience discipline. *JAMA*. 2005;294(17):2221-2224.
5. Stahl SM. Neuroscience-based Nomenclature: classifying psychotropics by mechanism of action rather than indication. *Current Psychiatry*. 2017;16(5):15-16.